PROPOSAL TO CONDUCT AN OCCUPATIONAL EDUCATION PROJECT

PROJECT CATEGORY: VEA Subpart 3 Program Improvement Funds

AREA OF PROJECT: (Check one)

[ ] Displaced Homemakers [ ] Support Services for Women
[ ] Research [ ] Personnel Training
[ ] Exemplary & Innovative [ ] Gender Equity
[ ] Curriculum Development [ ] Disadvantaged
[ ] Vocational Guidance and Counseling [ ] Handicapped

AGENCY: SANTA BARBARA COMMUNITY COLLEGE DISTRICT

ADDRESS: 721 Cliff Drive, Santa Barbara, CA 93109-9990

DISTRICT SUPERINTENDENT OR AUTHORIZED DESIGNEE:

Name: Dr. Peter R. MacDougall Title: Superintendent/President
Signature: [Signature] Date: 11/3/82

CHIEF ADMINISTRATOR FOR OCCUPATIONAL EDUCATION:

Name: Melvin J. Elkins Title: Assistant Dean, Instruction
Signature: [Signature] Phone: (805) 965-0581, X251 Date: 11/3/82

PROJECT DIRECTOR:

Name: Ms. Jodi Simpson Title: Associate Professor, Electronics
Signature: [Signature] Phone: (805) 965-0581, X308 Date: 11/3/82

P.L. 94-482 FUNDS REQUESTED: $45,000

Duration of Project (Total Months) 14

Proposed Starting Date: 2/1/83 Proposed Ending Date: 6/30/84 Date Proposal Transmitted to State: 11/4/82

STATE USE ONLY

Received: (Date) (Time) (Initial)
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ABSTRACT

Project Title: COMPUTER USE AND SOFTWARE DEVELOPMENT IN TECHNOLOGY
TRADE AND INDUSTRY EDUCATION

Project Director: Ms. Jodi Simpson

Organization: SANTA BARBARA CITY COLLEGE

Address: 721 Cliff Drive
Santa Barbara, CA 93109-9990

Phone: (805) 965-0581, Ext. 308

Project Description

With the help of South Coast, Santa Barbara area industries, especially the Santa Barbara County Industry Education Council, our objective is to develop computer aided instructional (CAI) software for four occupational areas: Automotive Services Parts Management, Electronics - Microprocessor Control, Graphics - Phototypesetting, and Hotel & Restaurant Management - Inventory and Menu-Planning. In addition, we wish to achieve competency skill level in computer usage for eight of our vocational instructors in these specific areas of instruction.

We shall accomplish this by hiring a project director, consulting industrial representatives, purchasing supplies, and leasing hardware. The Industry Education Council will be a "clearing house" for identification and referral of qualified "computer usage" consultants. Total District and VEA Subpart 3 expenditures of $53,812.00 will allow Santa Barbara City College to embark on a project which we are sure will provide real dividends; i.e., greater cost effectiveness (in class) through the use of CAI materials, greater student learning of skills through self-paced options offered through use of CAI materials, and greater student learning of industrial concepts through the use of the micro-computer programs.

Santa Barbara City College is eminently qualified to embark on this proposed project. A qualified director, appropriate space and location for computer utilization, an existing active CAI Campus Committee, and Industry Education Council which has good rapport and representation of local businesses and industries, plus some eight anxious instructors from trade and technical education departments who recognize the importance in developing software and computer skills in their areas of expertise clearly indicates that we are ready for such a grant.

The instructional software materials, produced by this project, will focus on industrial concepts and principles, literacy levels, subject content mastery, and its adaptation within conventional computerized systems.

In summary, we believe this project could very well develop into a model that could be extended into the many occupation programs we have on campus; also, plans are to disseminate computer software to other campuses throughout the state.
I. NEEDS ANALYSIS

A few years ago both interest and need for computer literacy were basically restricted to programming; lately, however, we have seen the genuine need for computer usage as a "tool of the trade" in occupational areas such as Automotive Services, Electronics, Graphics, and Hotel & Restaurant Management.

Although one of our Machine Shop faculty members recently undertook a sabbatical leave to investigate numerical control machining, very little has been accomplished institutionally relative to a college-wide effort for providing "in-service" training in computer usage, computer software development, and computer application in occupational industrial areas.

Our specific needs in each of these four vocational areas are as follows:

A. Automotive Services

1. A comprehensive industry-based software package (such as NAPA, TRIAD, or AUTOLOG) which provides an inventory system for automotive parts and which may be put into direct use in our Automotive Services Program.

2. A CAI software package which will accompany and/or incorporate the industry-based software and will assist the students and faculty in mastering the computer skills required for use of the industry-based inventory system.

B. Electronics

1. A CAI software package which will interact between a microprocessor-based system (Apple II, IBM Personal Computer, etc.) and a microprocessor learning kit (Heathkit, Motorola D-5, etc.), providing tutorial sessions in, practice sessions with, and quizzes on the use and programming of the microprocessor and various support chips (PIA, ACLA, VIA, etc.)

C. Graphics

1. A CAI software package which will incorporate the industry-based software used by the Compugraphics 8200 and which will provide an interactive tutorial assistance in the operation of this widely used system.
D. Hotel & Restaurant Management

1. A comprehensive industry-based software package (such as IHS) which will allow for inventory as well as menu-planning for use in our Hotel & Restaurant Management training program.

2. A CAI software package which will accompany and/or incorporate the industry-based software and will assist the students and faculty in mastering the inventory and menu-planning software system.

At Santa Barbara City College we currently have a Computer Aided Instruction (CAI) Committee. This Committee is attempting to give campus-wide guidance in the following:

A. Resource development and computer literacy.

B. Long-range planning for a college-wide effort in computer aided instruction.

C. Coordination of efforts in the procurement of computer equipment (both public and private contributions).

II. OBJECTIVES

A. Development of Industry-Based and Computer Aided Instructional Software for Industrial Applications

The objectives that need to be accomplished are as follows:

1. Through field testing with students, faculty, and director, develop one software package of CAI materials (which includes the industrial software package) for the following areas:

   a. Automotive Services - Parts Management
   b. Electronics - Microprocessor Control
   c. Graphics - Phototypesetting
   d. Hotel & Restaurant Management - Inventory and Menu-Planning
2. Provide individual and group workshops to develop competencies among eight vocational instructors from four different trade/technical areas of instruction with respect to the principles involved in the use of the industry-based systems as well as with respect to the use of the corresponding CAI software package. One instructor's training package will be provided for each of the following instructional areas:
   a. Automotive Services
   b. Electronics
   c. Graphics
   d. Hotel & Restaurant Management

3. Reinforce classroom usage of developed CAI materials for the aforementioned programs through two planned supervisory sessions.

B. Improvement of Gender Equity in Programs and Instructors' Ability to Meet the Needs of Disadvantaged and Handicapped Students

Existing campus coordination of Gender Equity, EOPS, Handicapped, and ESL programs will be apprised of our efforts and contact persons of these aforementioned programs will be encouraged to participate in the computer training sessions; hopefully, their awareness of computer usage will enable them to clarify the benefits of computer aided instruction to their clients.

III. PROCEDURES/ACTIVITIES

A. Prime Responsibilities of Project Director

The overall success of this project will be determined by the coordinating effectiveness of our project director, Ms. Jodi Simpson. Please see her resume which is Exhibit A. Ms. Simpson's prime responsibilities will be to direct the following activities:

1. Development of Software Packages for Each Instructional Area

   Two different software packages, one industrial (which in some cases may be pre-existing) and one computer aided
instruction/learning, will be developed for each
instructional area prescribed; i.e., Automotive
Services, Electronics Graphics, and Hotel &
Restaurant Management.

The development procedures will be to first obtain
industry software (the most popular or widely used
packages) for each of the target areas; i.e., NAPA,
TRIAD software systems (Automotive Services); editing
and assembling software (Electronics); software for
the Compugraphics 8200 (Graphics); and IHS software
(Hotel & Restaurant Management).

The industrial software will be incorporated into a
well thought-out CAI package which will guide the
student through the proper use of the industrial
software, allow for interaction with, and testing
on the principles involved in the use of the industry-
based systems. Instructors and industry representatives
in each of the fields will be consulted when identifying
the most important aspects of each system to highlight
in the CAI package as well as when determining the best
methods for reinforcing these important aspects.

2. Computer Concepts Competencies

Eight different instructors will spend approximately
20 hours each, in a group setting, assimilating the
basic computer concepts involved; i.e., the theory
behind the approach of the CAI package, the operation
of the microprocessor-based systems (disk drives,
printer, etc.) which will allow calling up of the
CAI routines, and mastery of the principles presented
in the CAI package dealing with the use of the industry-
based systems.

Participation of special lectures from computer science
specialists and the CAI Committee membership will complete
this task. See Exhibit C for the CAI Committee Chairperson's
resume.

Approximate estimated costs of this activity is $17.78/hour
X 20 hours = $355.00.
The project director in cooperation with a cadre of industry- and vendor-based consultants will develop this activity. The Industry Education Council will assist to identify industry representatives (please see Exhibit B). The local Industry Education Council has an accomplished history in the implementation of computer literacy, computer workshops, and has played an important advisory role in the Santa Barbara County area (see Exhibit D).

Even though we expect an estimated fifty percent of local industries will donate their consultant time, we acknowledge that probably fifty percent of our funds will be needed to support this endeavor; i.e., $20.00 X 661 hours = $13,217. Furthermore, it is estimated that the cost for supplies and materials to produce eight software packages, as well as distribution of such packages to other college districts in California and the Chancellor's Office, will be approximately $4,445.00; i.e., $555.00 X 8 software packages = $4,445.00.

3. Reinforcement of Computer Aided Instruction (CAI)

The project director, with consultation of the Computer Aided Instruction (CAI) Committee will provide the necessary time to reinforce instructors' usage of software in a classroom study setting.

4. Reinforcement of Industrial Based Software

Consultants who will be referred by the local Industry Education Council will supervise these sessions. The project director will work with the Industry Education Council in making necessary arrangements.

5. Purchase of Microprocessors

The lease/purchase of eight centrally located microprocessors will need to be made available to accommodate the following activities; i.e., instructor workshops on concepts, proofing, refinement of developed software packages, instructor reinforcement, and classroom utilization of computer aided instruction and industry-based materials.
The estimated cost for leasing eight microprocessors is $2,000.00 X 8 microprocessors = $16,000.00.

NOTE: Santa Barbara City College plans on purchasing these microprocessors upon termination of the contract.

B. Timeline of Procedures/Activities

This timeline commences with the project starting date of February 1, 1983 and culminates with the project ending date of June 30, 1984.

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We choose to integrate our efforts in this project with key instructors in occupational areas where computer usage is part and parcel of the trade; furthermore, we are convinced that by integrating our efforts with industry in the development of computer software, we will be much more effective in upgrading the quality of our graduates.

IV. PROJECT MANAGEMENT

The project director will play a major role in this computer software development program; her tasks are, but not limited to, the following:

1. Editing and development of software in its final form for all computer aided instruction (CAI) and industry-based software packages involved in this project.

2. Playing a leading role in arranging for computer faculty availability and scheduling for "in-service" concepts training.

3. Interfacing with Industry Education Council recruitment and assignment of industry subject area specialists with industries.

4. Finalizing training packages for instructors.

5. Coordination of campus activities between the occupational staff and the Campus Computer Aided Instruction (CAI) Committee.

This project director, see Exhibit A for resume, will be hired part-time over a fifteen-month period to manage and accomplish the objectives. The anticipated cost will be some $10,983.

Santa Barbara City College will provide computer facility space, office space for the project director, mileage for principal staff members, and a typist who will produce necessary documents of accountability, the project's progress reports, and evaluation at the project's completion. These costs are defined as both direct and indirect expenditures and are so listed under the budget summary.

The Assistant Dean of Instruction, Occupational and Career Education will be responsible for the project progress reports, final evaluation report on outcomes and recommendations, and for making software packages
available to other colleges with similar programs. See resume of this principal staff member, Exhibit E. This cost to the District will be approximately .05 X $44,240 = $2,212.00.

Santa Barbara City College's instructional and administrative staff have been planning for some time concerning the necessity of developing computer software in specific, non-developed areas of occupational education and it is recognized that the only way we can accomplish this is to provide the specific wherewithal and plans to do same.

Key instructional staff of eight persons who will be involved in the development of the computer software and the "in-service" aspects of this project have shown strong written interest in the said project.

V. LOCATION/FACILITIES

The main campus of Santa Barbara City College has space provided for eight centrally located stations in the Electronics Lab — A-100 which will house these stations during the first and third phases of this project; i.e., concepts and instructional reinforcement portions of the project. During the second phase; i.e., software development, two microprocessors each will be assigned to the individual instructional areas; i.e., Automotive Services, Electronics, Graphics, and Hotel & Restaurant Management. Accommodations have been completed for the aforementioned location of computer locations.

The facilities that will house the computer stations (which will be in various computer software development phases) and "in-service" training needs are clean, quiet, and are compatible logistically to a variety of occupational training programs.

VI. BUDGET SUMMARY

We at Santa Barbara City College feel that by participating in this project we can become more cost effective in several ways; i.e., providing non-existant computer software to other colleges who offer similar programs, provide programmed material for our own staff wherein students can study semi-independently, and by increasing the student job placement potential.

Please see the next page for specific details and figures.
### Budget Summary

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California Community Colleges 1982-83
VII. EVALUATION

Evaluation to take place upon the completion of the project will include a team of the following persons:

Assistant Dean of Instruction, Occupational and Career Education

Project Director

Representative of the Industry Education Council

Representative of the Campus Computer Aided Instruction (CAI) Committee

The evaluation will include a written assessment of the outcome of objectives of the project and achievement ratio of same.

The long-range effect of this evaluation will determine to what extent Santa Barbara City College will be able to incorporate computer usage into all of the trade and technical curriculums. If all goes as planned, Santa Barbara City College will assume, at the termination of the contract, the lease/purchase option on the eight microprocessors used in the project and develop software and use of same in other occupational areas.

VIII. DISSEMINATION

Dissemination of computer aided instruction and industry-based software and learning packages will be available to any community college in the state of California upon written request.

Any funds available at the termination of this project will be used to duplicate software and printed material and same will be distributed to other colleges upon their request; when funds are exhausted, the requesting college will have to cover the cost of duplicating and mailing.

The project director will be prepared to give a presentation on the outcome of this computer software development and usage project; the presentation will be comprised of a 35 mm slide (which will be funded...
by Santa Barbara City College) and an audio show presentation describing the outcome of the project. The total cost of the presentation is estimated at some $600 to cover mileage and conference and some $400 to cover photography and script for a total of some $1,000.00.

11/2/82
bk

attachments: Exhibit A - Resume of Ms. Jodi Simpson
Exhibit B - 10/21/82 letter from Santa Barbara Industry Education Council
Exhibit C - Resume of Mr. Elwood Schapansky
Exhibit D - Flyer for Microcomputer Software Fair
Exhibit D - Resume of Mr. Melvin J. Elkins